

REMARKS

Applicants thank the Examiner for the very thorough consideration given the present application. Claims 1, 3-4, 7-25, 29, and 31-34 are currently pending in this application. No new matter has been added by way of the present amendment. For instance, the amendments to claims 1, 13, 14, 29 and 33 are supported by previously presented claim 32, as well as Figures 1 and 2. New claim 34 is supported by, for example, Figure 2. Accordingly, no new matter has been added.

In view of the amendments and remarks herein, Applicants respectfully request that the Examiner withdraw all outstanding rejections and allow the currently pending claims.

Issues Under 35 U.S.C. § 102(b)

Claims 1, 13, 14 and 29 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Bernier et al. (U.S. 5,834,571) (hereinafter Bernier '571) "for the reasons adequately set forth from paragraph 6 of the office action of November 30, 2007". Applicants respectfully traverse.

The Examiner asserts that Bernier '571 discloses a method of producing a polymer in a continuously operated gas phase reactor, polymerizing at least one monomer in a bed containing an active catalyst and adjusting a discharge rate to withdraw a polymer product from the reactor.

The Examiner further asserts that Bernier '571 inherently teaches the following:

- 1) adjusting a discharge rate of the polymer powder so as to maintain a constant bed level during polymerization (p. 5 of outstanding Office Action)
- 2) separately recovering particle agglomerates from the reactor (p. 6 of outstanding Office Action)

- 3) providing a control valve that is adjusted to provide for pulsating operation (p. 6 of outstanding Office Action).

Applicants respectfully disagree and submit that the Examiner has failed to establish a *prima facie* case of anticipation. For anticipation under 35 U.S.C. §102, the reference must teach each and every aspect of the claimed invention either explicitly or impliedly. Any feature not directly taught must be inherently present. The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. *In re Rijckaert*, 9 F.3d 1531, 28 USPQ2d 1955 (Fed. Cir. 1993).

The present invention is directed, *inter alia*, to a method of producing a polymer in a continuously operated gas phase reactor, comprising the steps of polymerizing at least one monomer in a bed containing an active catalyst, continuously withdrawing polymer powder from the reactor through a first outlet nozzle, adjusting a discharge rate of the polymer powder so as to maintain a constant bed level during polymerization and separately recovering particle agglomerates from the reactor by discontinuously withdrawing the particle agglomerates through a second outlet nozzle, wherein the discharge rate of the polymer powder is adjusted by using a continuously operated control valve, the operation of the control valve is adjusted by using a control signal obtained from a bed level controller, and wherein the control valve is adjusted to provide for pulsating operation to prevent clogging of the valve (e.g., claim 1). In a preferred embodiment, the ratio between the polymer powder continuously discharged from the reactor and the polymer particle agglomerates discontinuously withdrawn is in the range of 1:1 to 10,000:1 (e.g., claims 1, 13, 14, 29 and 33), and the polymer powder is degassed after it is withdrawn from the reactor (e.g., claim 32). In another embodiment, the polymer powder is

withdrawn via an outlet nozzle connected to the control valve, and said nozzle is provided with a grid flush mounted at the reactor wall to prevent lumps from entering the pipe (e.g., claim 33). Bernier '571 fails to teach a method as claimed.

Bernier '571 discloses a gas phase polymerization process wherein a stream of monomer and gas is introduced into a polymerization zone and at least one liquid component is provided. Bernier '571 does not explicitly or implicitly disclose a method of producing a polymer in a continuously operated gas phase reactor, by continuously withdrawing polymer powder from the reactor and discontinuously withdrawing particle agglomerates, wherein the ratio between the polymer powder continuously discharged from the reactor and the polymer particle agglomerates discontinuously withdrawn is in the range of 1:1 to 10,000:1.

Initially, it is noted that Bernier '571 discloses that the agglomerates are withdrawn from the reactor together with the polymer (see the Figure of Bernier '571, reference number 44; see also col. 19, lines 25-27, where Bernier '571 discloses that "fluid and product leave reactor 10 at point 44"). Thus, Bernier '571 cannot possibly explicitly or implicitly disclose the steps of continuously withdrawing polymer powder from the reactor **through a first outlet nozzle**, and separately recovering particle agglomerates from the reactor by discontinuously withdrawing the particle agglomerates **through a second outlet nozzle**.

Moreover, Bernier '571 discloses that his invention is based on the discovery that, by providing at least one component in the polymerization zone, which component is capable of being liquid under the conditions at the polymerization zone ("liquid component"), the polymerization process can be enhanced (see Bernier '571 at col. 3, lines 27-35). At column 5, lines 14-26, Bernier '571 discloses that, in a preferred embodiment, the liquid component is

provided in an amount sufficient to substantially reduce or eliminate the presence of fines in the gases withdrawn from the polymerization zone. The liquid component is also provided in an amount sufficient to substantially prevent undue agglomeration of polymer particles in the polymerization zone (col. 5, lines 27-42).

As evidenced by the enclosed Declaration Under 37 C.F.R. 1.132, during a normal fluidized operation, the ratio of the polymer carried by the recycle gas to the polymer withdrawn via a discontinuous outlet is less than about 0.1:1. As noted above, Bernier '571 discloses that the amount of fines is lower when the liquid is present (as compared to a normal operation). A "lower level of fines" is indicative of a smaller amount of powder being carried by the recycle gas out of the reactor, as it is the fine particles those which leave the bed with the fluidization gas. Thus, the ratio of the polymer carried by the recycle gas to the polymer withdrawn in Bernier '571 is necessarily lower than 0.1:1 (the ratio during the "normal" operation). Accordingly, Bernier '571 does not inherently or explicitly disclose that the ratio between the polymer powder continuously discharged from the reactor and the polymer particle agglomerates discontinuously withdrawn is in the range of 1:1 to 10,000:1.

Moreover, present claim 1 requires that the outlet pipe contains a continuously operating control valve adjusted to provide pulsating operation, so as to prevent clogging of the valve. Such a valve is not disclosed or suggested by Bernier '571. As the Examiner indicated, the continuous withdrawal in Bernier '571 takes place in the fluidization gas stream. The fluidization gas recycle line includes only a compressor and a heat exchanger (see Figure; see also, col. 20, line 8). Moreover, Bernier '571 fails to teach or suggest pulsating operation of the valve.

Clearly, Bernier '571 fails to explicitly or implicitly teach each and every aspect of the claimed invention, and thus fails to anticipate the same.

Accordingly, reconsideration and withdrawal of this rejection are respectfully requested.

Issues Under 35 U.S.C. § 103(a)

Claims 1, 3, 4, 6-25, and 29-31 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Bernier '571 "for the reasons adequately set forth from paragraph 8 of non-final office action of November 30, 2007". Applicants respectfully traverse.

Initially, Applicants note that the Office Action of November 30, 2007 rejected these claims over Bernier '571 in view of de Lorenzo et al. (U.S. 4,535,134). However, there is no mention of de Lorenzo in the present Office Action. Thus, the claims cannot possibly be rejected "for the reasons adequately set forth from paragraph 8 of non-final office action of November 30, 2007", as the prior art relied upon by the Examiner in the outstanding Office Action is different than that relied upon in the Office Action of November 30, 2007.

Moreover, Applicants submit that the Examiner has failed to establish a *prima facie* case of obviousness. To establish a *prima facie* case of obviousness, the prior art reference (or references when combined) must teach or suggest all the claim limitations. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). Additionally, there must be a reason why one of ordinary skill in the art would modify the reference or combine reference teachings to obtain the invention. A patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art. *KSR Int'l Co. v Teleflex Inc.*, 82 USPQ2d 1385 (U.S. 2007). There must be a reason that would have prompted

a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does. *Id.* The Supreme Court of the United States has recently held that the "teaching, suggestion, motivation test" is a valid test for obviousness, albeit one which cannot be too rigidly applied. *Id.* Rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. *Id.*

As previously discussed, Bernier '571 fails to teach a method of producing a polymer in a continuously operated gas phase reactor, comprising the steps of polymerizing at least one monomer in a bed containing an active catalyst, continuously withdrawing polymer powder from the reactor through a first outlet nozzle, adjusting a discharge rate of the polymer powder so as to maintain a constant bed level during polymerization and separately recovering particle agglomerates from the reactor by discontinuously withdrawing the particle agglomerates through a second outlet nozzle, wherein the ratio between the polymer powder continuously discharged from the reactor and the polymer particle agglomerates discontinuously withdrawn is in the range of 1:1 to 10,000:1.

Moreover, the Examiner has not provided any reason or rationale to modify the teachings of Bernier '571 as proposed. Accordingly, Applicants submit that the present rejection is improper and should be withdrawn.

Reconsideration and withdrawal of this rejection are respectfully requested.

Conclusion

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding rejections and objections and that they be withdrawn. It is believed that a full and complete response has been made to the outstanding Office Action and, as such, the present application is in condition for allowance.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Andrew D. Meikle, Reg. No. 32,868 at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.14; particularly, extension of time fees.

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Respectfully submitted,

By


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Enclosure: Declaration Under 37 CFR 1.132